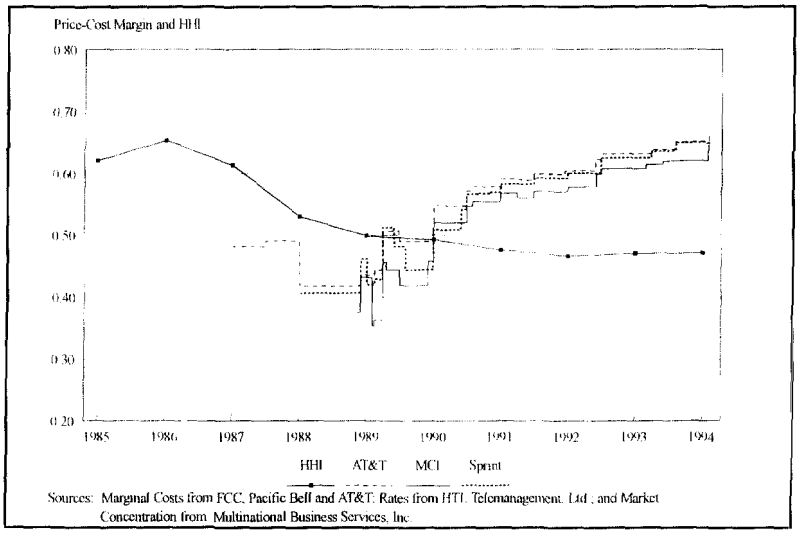
Thus, in the 1990s, price-cost margins doubled while the three providers stabilized shares of service revenues.[6]

FIGURE 5–4
PRICE-COST MARGINS AND MARKET CONCENTRATION
VIRTUAL NETWORK (10,000 HOURS PER MONTH)



Reviewing the behavior of pricing margins across all four sets of markets, one concludes that they increased while concentration stabilized in the first half of the 1990s. When AT&T's share stopped its slide downward, price-cost margins for all three large service providers increased by substantial percentages each year.

6. Those margin-share relationships are not sensitive to the estimates of marginal cost; for the negative correlation between trend margins and the HHI to have been reversed, marginal costs would have to have increased by more than 57 percent in 1990 and 75 percent in 1993, relative to marginal costs in 1985. Recall that marginal costs included access charges and operating costs. Leaving aside access charges as reported by the Commission, for the trend in price-cost margins to have been reversed, incremental operating expenses would have to have increased by a factor of four in 1990 and by a factor of five in 1993, relative to 1985, in order to change the direction of the relationship between concentration and price-cost margins.

Price-Cost Margins in Discount Plan Services

Standard tariffs for message toll services were displaced in part by discount plan tariffs in the first half of the 1990s. At the same time, WATS for large-volume business subscribers was displaced by contract virtual network service tariffs. The extent to which discount in the new tariffs reduced the prices paid by subscribers is not known, because there is no information as to which tariff—standard or discount—applied on services actually delivered to subscribers. Discount tariffs submitted to the Commission or the state commissions probably applied on a third of WATS services by volume and revenues in the 1990s. No similar estimate can be made of the percentage of volume or revenues of message toll services provided on discount plans.

Even so, the three largest facilities-based carriers offered discount plan MTS services aimed at home and small business subscribers throughout the country. For example, the AT&T True USA Savings plan offered a 20 percent reduction on long-distance charges for customers spending more than $50 per month. The question is what that implied for the "price" of a representative call.

MTS discount calling plans divide into three main classifications.[7] The most common plans in the early 1990s required the customer to pay a monthly fee to receive an amount of "free" calling time during offpeak periods. For example, under AT&T's Reach Out America, a customer paid a fixed fee to receive one hour of calling time to be used during night/weekend hours (calls made during the day were charged the standard MTS rate). Other AT&T plans that fell into that group were: Small Business Option, Block of Time–One-Hour Plan with Evening Option, Block of Time–One-Hour Plan with Evening & Day Option, and Block of Time–Half-Hour Plan. MCI's discount plans that fell into that group were: PrimeTime Plan, PrimeTime–Day Plan, Sure Save Option, Sure Save–Evening & Day Plan, Sure Save–Half-Hour Plan, and Any-Time Plan. Sprint's discount plans in that group were: Sprint Select,

7. Appendix 1, Discount Plan Summary, provides detailed information on the most prevalent discount plans of the three large carriers.

Sprint Select-Day Option, Sprint Select-Day Plan, and Sprint Select-Day Plan-Evening/Night Option.

The second set of discount plans consisted of those based on monthly usage levels. For example, under AT&T's True USA Promo, a customer received a 10 percent discount on her monthly long-distance bill between $10 and $24.99, and higher percentage discounts at higher usage levels. The MCI discount plans did not include that type of plan. Sprint had three plans that fell into that group: Dial "1" Usage Discounts, Residential Promo, and Sprint Plus Usage Discounts.

The third classification of discount plans comprised those in which discounts were triggered by selection of a person called. MCI had two plans (Friends & Family I and Friends & Family II) that gave discounts on calls to specific other subscribers. For example, under Friends & Family I, a customer chose a "calling circle" of other MCI customers and received a 20 percent discount on calls to those customers. The AT&T and Sprint discount plans examined here did not include that type of plan.[8]

The price per minute of a representative long-distance call made under any one of these types of discount plan can be determined from (1) the customer's monthly usage level (2) the distribution of that customer's calls by day, evening, and night/weekend (3) the distribution of the customer's calls by mileage (4) the number of individual calls and (5) time-length of individual calls.[9] To calculate representative prices for each calling plan, two different distributions of monthly usage levels have been stipulated, that from survey data complied by LINK Resources Corporation (LINK) and that contained in a submission from AT&T in proceedings at the Commission. Based on the LINK data, table 5-5 indicates the percentage of respondents with monthly long-distance bills falling in certain ranges. (For example, 36 percent of AT&T's customers reported monthly long-distance bills were less than $10.99.[10]) Table 5-5 also

8. Two plans did not fall into any of the above groups: AT&T's Pro WATS 1 Plan and MCI's EasyRate Option (see individual plan summaries in appendix 5-1 for more detailed information on all those plans).

9. Calls are assumed to be direct-dialed, not collect, and not to incur any credit card charges.

10. In that survey, some customers reported that they did not know their monthly

indicates the distribution of residential customers according to AT&T's submission to the Commission.[11] AT&T's data suggest that a higher percentage of its customers had monthly long-distance bills of less than $10 than the LINK data indicated.

usage levels. They were assigned on a pro rata basis to the eleven usage categories. The customers' monthly bills were set equal to the midpoints of the ranges shown in table 5-6.

11. According to Mr. Mandl's submission, "a total of over 60% [of its customers spend] $10 or less in calling per month. About a quarter of AT&T's customers make between $10 and $75 in long distance calling per month, [and] less than 5% of AT&T customers make more than $75 in long distance calls per month." Since the stated percentages sum to 90 percent, we must assign the remaining 10 percent of AT&T's customers. To be conservative, they are assigned to the $10 to $75 class, rather than the less than $10 class, since this results in lower prices and price-cost margins. *See* Letter of Alex Mandl, executive vice president and CEO of AT&T's Communications Services Group, to the Honorable Reed E. Hundt, Chairman, Federal Communications Commission, October 4, 1994.

TABLE 5-5
DISTRIBUTION OF RESIDENTIAL CUSTOMERS
HAVING MONTHLY BILLS IN THE INDICATED RANGES

Monthly Bill	AT&T	MCI	Sprint
LINK DATA			
Up to $10.99	36	30	27
$11.00 to $14.99	5	4	4
$15.00 to $24.99	17	14	17
$25.00 to $34.99	13	15	15
$35.00 to $49.99	10	14	12
$50.00 to $74.99	9	10	12
$75.00 to $99.99	4	6	5
$100.00 to $149.99	3	2	6
$150.00 to $199.99	1	2	1
$200.00 to $249.99	1	2	1
Over $250.00	1	1	1
AT&T DATA			
Up to $10.00	60	N/A	N/A
$10 to $75	35	N/A	N/A
Over $75	5	N/A	N/A

Source: LINK Resources Corp., 1993 HOME MEDIA CONSUMER SURVEY: RESIDENTIAL TELECOMMUNICATIONS 106 (1993); AT&T data as explained in the text.

For each of the eleven monthly bill categories provided in the LINK data, standard and discount MTS prices for a representative call have been estimated based on usage rates, time, and mileage distributions assumed in generating the price indices for standard MTS. The weighted average of those eleven prices, with weights equal to percentages of customers' monthly bills in those classes, yields an index prices per call minute for standard versus discount calling plans.[12] In addition to the index prices reported in

12 In some cases, low-volume usage levels caused prices to be higher under

this section, appendix 2 (tables A2–6 and A2–7) provides details on a wide range of alternative calling profiles (sixty profiles for residential customers and forty-eight for small-business customers). Calculating prices for discount MTS services with those additional calling profiles ensures that results deriving from the base-case profile are robust, that is, changing assumptions regarding customers' calling profiles does not affect conclusions of the study.

The discount price indices for Reach Out America[13] (AT&T), Prime Time Day and Friends and Family I (MCI), and Sprint Plus and Sprint Select Day (Sprint) have been used to form a set of offerings on eleven calling patterns. The most striking aspect of that set relates to discount pricing for low-usage customers. Most of those customers could not take advantage of any discount plan to achieve a price per call below the standard price because their monthly bills were below the required minimum. An AT&T submission to the Commission stated that 60 percent (approximately thirty-nine million) of its customers had monthly bills of less than $10, a level that would disqualify all of them from realizing lower prices by signing up for Reach Out America.

Even so, large numbers of subscribers signed on whether they qualified or not. It is instructive to observe what prices small customers paid under carriers' "discount" plans. As shown in figure 5–5, those customers with monthly bills of $5.50 paid more than double the standard price. And those customers who signed onto the most popular MCI plan up to mid-1991, paid more than double the standard MCI tariff price. After 1991, when its Friends and Family I plan was introduced, they received some discount (see figure 5–6).[14] Sprint's customers paid the same as standard MTS rates for

discount calling plans than under standard MTS. In those cases the discount prices were excluded from the weighted-average price calculation. Appendix 2 contains further details on the calculation of the weighted-average index prices.

13. The particular plan was the Block of Time-One-Hour Plan with Day & Evening Option.

14. Friends and Family I produces lower prices because 30 percent of a customer's bill is assumed to be accounted for by calls to individuals in their "calling circle" who are MCI customers. In calculating prices for Friends and Family II, which offers discounts on calls to non-MCI customers in a "calling circle," it is assumed that an additional 50 percent of a customer's calls are made to individuals in their calling circle who are not MCI customers.

its Sprint Plus Usage Discounts, but they paid almost double for its Sprint Select Day plan (see figure 5–7). For most of that period so-called discount plans offered higher prices than standard MTS tariffs to long-distance customers with limited usage rates each month.

FIGURE 5–5
RESIDENTIAL INDEX PRICES FOR AT&T STANDARD SERVICE AND REACH OUT AMERICA DISCOUNT CALLING PLAN
(MONTHLY BILL OF $5.50)

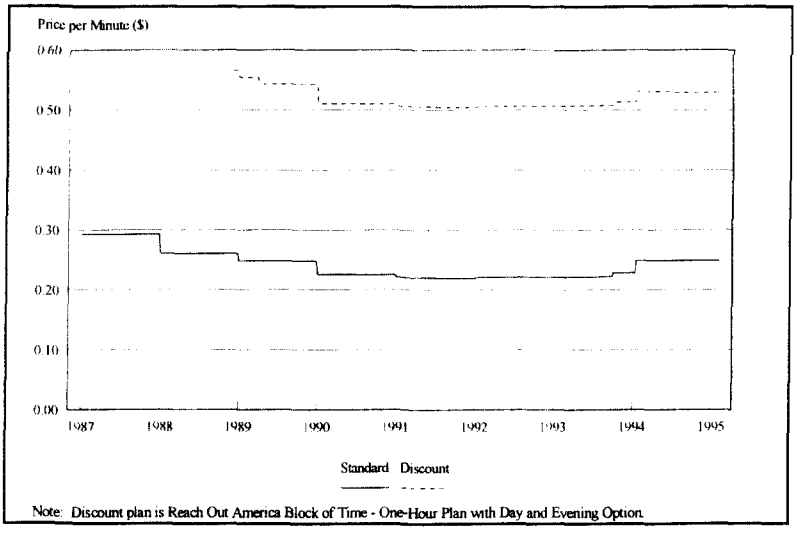
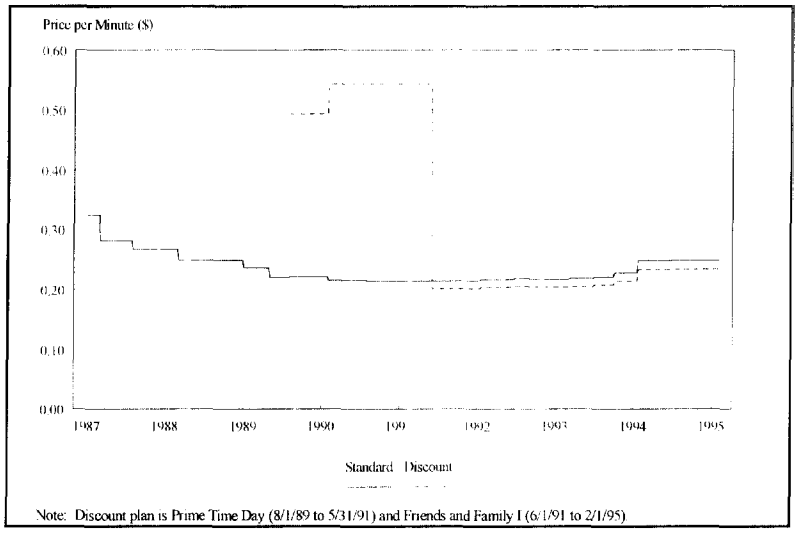
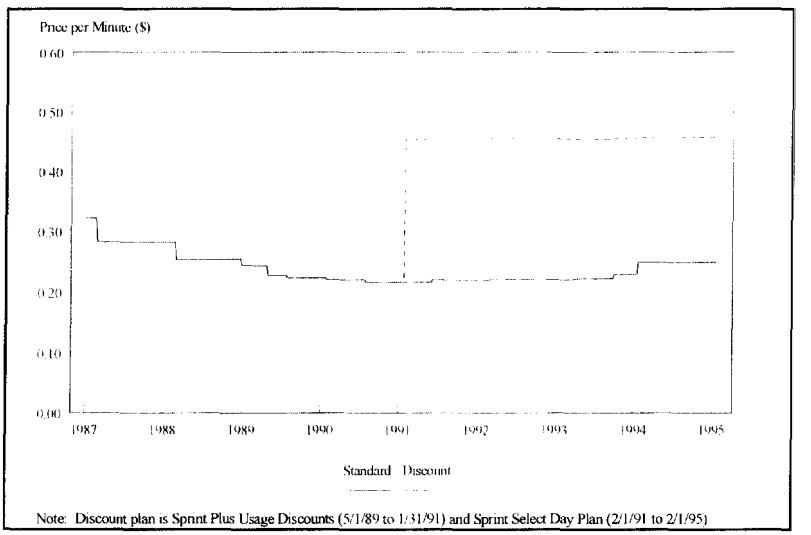


FIGURE 5–6
RESIDENTIAL INDEX PRICES FOR MCI STANDARD SERVICE AND PRIME TIME DAY AND FRIENDS & FAMILY I DISCOUNT CALLING PLANS
(MONTHLY BILL OF $5.50)



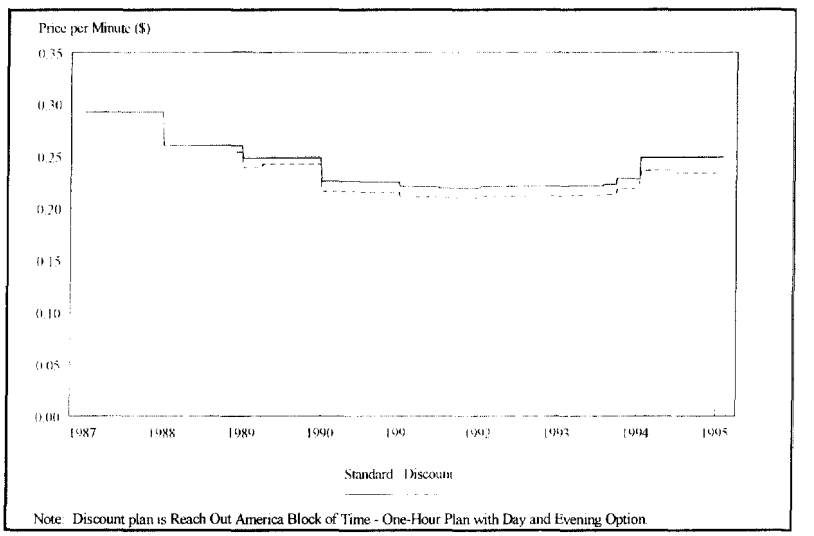
Note: Discount plan is Prime Time Day (8/1/89 to 5/31/91) and Friends and Family I (6/1/91 to 2/1/95)

FIGURE 5–7
RESIDENTIAL INDEX PRICES FOR SPRINT STANDARD SERVICE AND SPRINT PLUS USAGE AND SPRINT SELECT DAY DISCOUNT CALLING PLANS
(MONTHLY BILL OF $5.50)



For customers with larger monthly bills (for example, equal to the all-sample average bill) there were savings in those years from joining a discount plan. Figures 5–8 through 5–10 indicate the percentage of the standard price that was saved by being on carrier discount plans. The weighted-average index price for AT&T's Reach Out America plan was approximately 96 percent of the standard MTS index price for the same call (see table 5–6). MCI's customers paid approximately 94 percent of its standard MTS rate (table 5–6), while Sprint's customers received discount rates that were from 94 percent to 77 percent of standard MTS from 1989 to 1994 (table 5–6).

FIGURE 5–8
RESIDENTIAL INDEX PRICES FOR AT&T STANDARD SERVICE AND REACH OUT AMERICA DISCOUNT CALLING PLAN



Note: Discount plan is Reach Out America Block of Time - One-Hour Plan with Day and Evening Option.

FIGURE 5–9
RESIDENTIAL INDEX PRICES FOR MCI STANDARD SERVICE AND PRIME TIME DAY AND FRIENDS & FAMILY I DISCOUNT CALLING PLANS

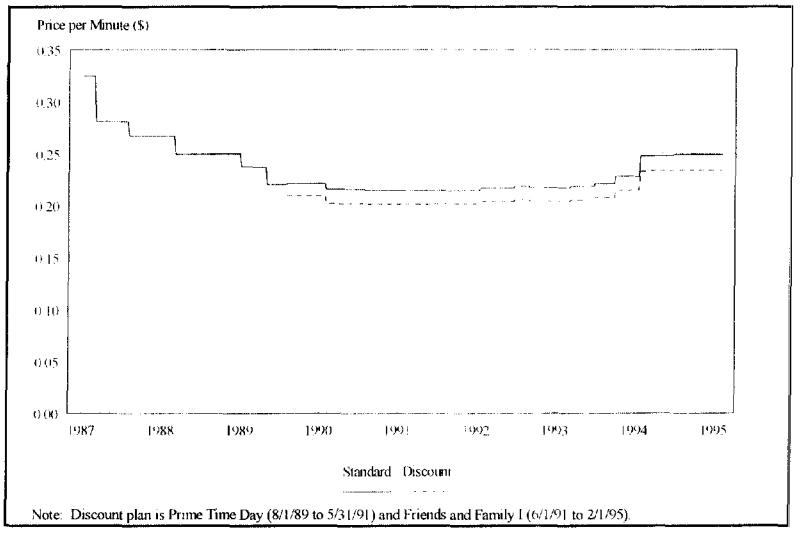


FIGURE 5–10
RESIDENTIAL INDEX PRICES FOR SPRINT STANDARD SERVICE AND SPRINT PLUS USAGE AND SPRINT SELECT DAY DISCOUNT CALLING PLANS

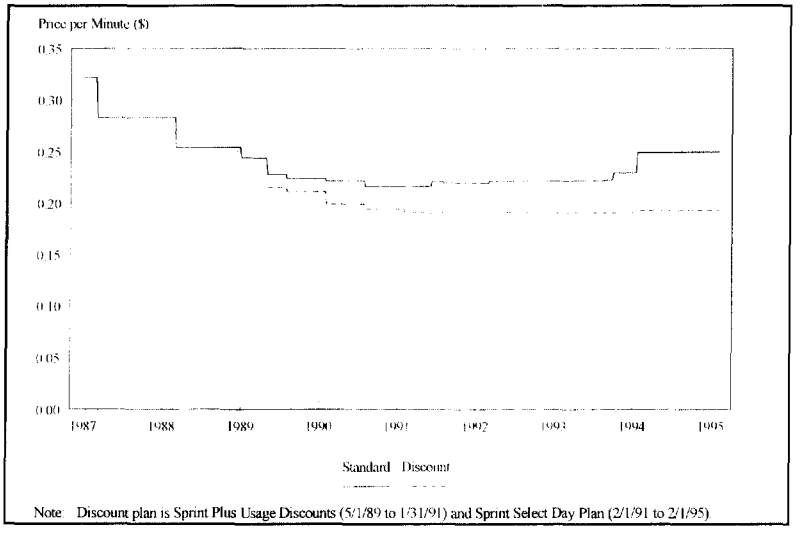


TABLE 5–6
DISCOUNT PLAN PRICES AS A PERCENTAGE OF STANDARD MTS PRICES

Year	AT&T	MCI	Sprint
1989	96	95	94
1990	96	94	90
1991	96	94	87
1992	96	94	86
1993	96	94	83
1994	94	94	77

Source: As described in the text for price indices on the representative long-distance call.

Even though they were discounts, those prices in the discount calling plans offered by AT&T, MCI, and Sprint increased after 1990 and at a faster rate than did prices in standard plans for the same call.[15] Discounting (except for Sprint's) did not decrease prices more over time since discount plan prices were constant or declining percentages of rising standard MTS prices. Thus, as concentration declined, the prices of discount plans show no more evidence of reductions than do those of the standard rates that they discount.

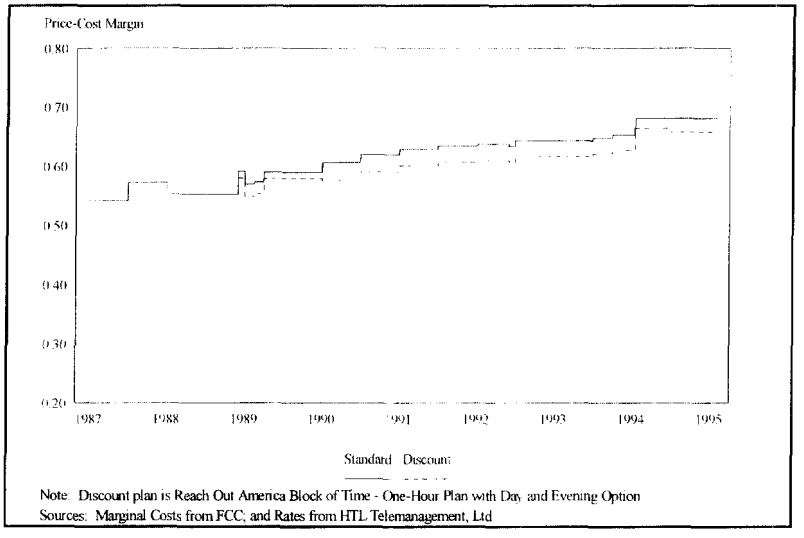
AT&T's price-cost margins on its Reach Out America plan were approximately 97 percent of those on its standard MTS plan (see figure 5–11 and table 5–7).[16] MCI's profit margins for its

15. In addition to the index prices calculated on the basis of membership over time in some discount plan, prices were estimated using the extreme assumption that a customer changed plans immediately at zero cost whenever his carrier offered a plan that provided that customer with a lower price. That would result in a theoretical "minimum" index price. As shown in appendix 5–2, the basic results of the analysis remain unchanged even under that extreme assumption.

16. AT&T's price-cost margins can also be calculated using as weights the percentages of customers in the three different monthly bill categories shown in table 5–5. The resulting index prices and price-cost margins using AT&T's data are slightly higher than the prices and margins found using the LINK data. That occurs because AT&T's submission to the FCC reports a higher percentage of customers

Prime Time Day and Friends and Family I plans averaged approximately 95 percent of those from offerings under its standard MTS plan (see figure 5–12 and table 5–7). And Sprint's margins earned on its Sprint Plus and Sprint Select discount plans averaged approximately 90 percent of its standard MTS plan (see figure 5–13 and table 5–7). Price-cost margins earned by AT&T, MCI, and Sprint on those discount MTS calling plans increased from 1987 to 1994, even though that period was marked by a substantial decline in market concentration.

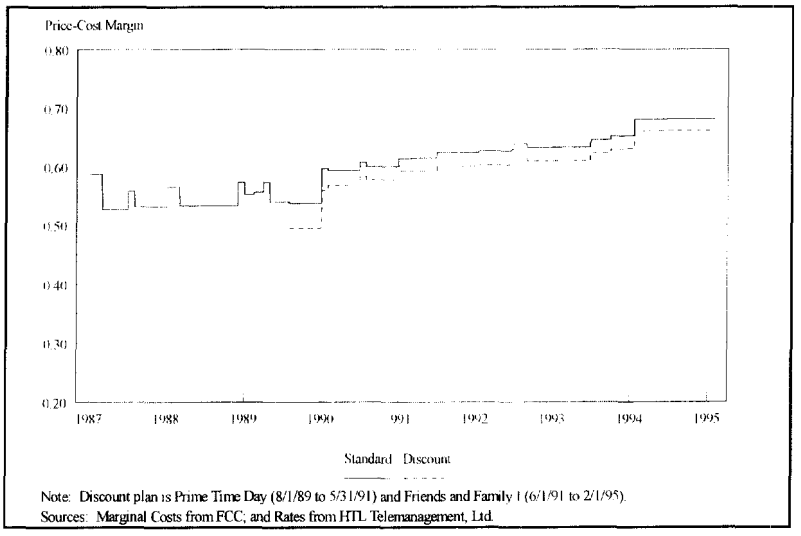
FIGURE 5–11
RESIDENTIAL PRICE-COST MARGINS FOR AT&T STANDARD SERVICE AND REACH OUT AMERICA DISCOUNT CALLING PLAN



Note: Discount plan is Reach Out America Block of Time - One-Hour Plan with Day and Evening Option
Sources: Marginal Costs from FCC, and Rates from HTL Telemanagement, Ltd

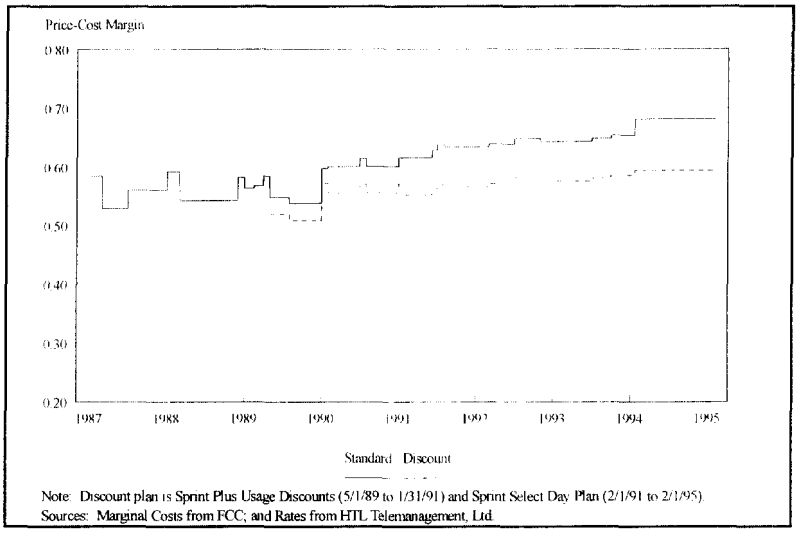
falling into the less than $10 per month category

FIGURE 5-12
RESIDENTIAL PRICE-COST MARGINS FOR MCI STANDARD SERVICE AND PRIME TIME DAY AND FRIENDS & FAMILY I DISCOUNT CALLING PLANS



Note: Discount plan is Prime Time Day (8/1/89 to 5/31/91) and Friends and Family I (6/1/91 to 2/1/95).
Sources: Marginal Costs from FCC; and Rates from HTL Telemanagement, Ltd.

FIGURE 5-13
RESIDENTIAL PRICE-COST MARGINS FOR SPRINT STANDARD SERVICE AND SPRINT PLUS USAGE AND SPRINT SELECT DAY DISCOUNT CALLING PLANS



Note: Discount plan is Sprint Plus Usage Discounts (5/1/89 to 1/31/91) and Sprint Select Day Plan (2/1/91 to 2/1/95).
Sources: Marginal Costs from FCC; and Rates from HTL Telemanagement, Ltd.

TABLE 5-7
DISCOUNT PLAN PRICE-COST MARGINS AS A PERCENTAGE OF STANDARD MTS PLAN PRICE-COST MARGINS

Year	AT&T	MCI	Sprint
1989	98	95	95
1990	97	96	93
1991	97	96	91
1992	98	96	91
1993	98	97	90
1994	98	97	87

Source: As described in the text.

That pattern of profit margins, on both standard and discount plans, in the presence of falling market concentration "may have occurred for a variety of reasons."[17] Indeed, there are at least four reasons why long-distance carriers would offer discounts: (1) to pass on cost savings (2) to "cheat" on tacitly collusive prices (3) to provide lower prices specifically to more price-sensitive customers and (4) to discipline resellers so as to limit their share of markets for MTS services. The first two reasons are scarcely credible. If discount plans passed on cost savings, margins would be the same on standard and discount plans, but they are lower on discount plans. Margins generated by AT&T, MCI, and Sprint for discount services show the same rising trend as for standard MTS service, so that the hypothesis that the discounts were manifestations of "cheating" on tacitly collusive prices would make sense only if "cheating" were being reduced over time. The two remaining explanations for discounts are that prices became discriminatory in favor of more price-sensitive customers or that discounts were an attempt to prevent resellers from capturing MTS market share. The evidence on

17. *Affidavit of B. Douglas Bernheim and Robert D. Willig, An Analysis of the MFJ Line of Business Restrictions,* December 1, 1994, *United States of America v. Western Electric Company, Inc. and American Telephone and Telegraph Company,* Civil Action No. 82-0192.

rising margins does not favor one or the other of those two explanations. Both are consistent with the conclusion that the MTS market's competitiveness lessened in the 1990s with the introduction of discount calling plans.

California Price-Cost Margin Behavior

Markets within a state conceivably performed differently as carriers proposed tariffs and service offerings that depended not only on the practices and procedures of the Federal Communications Commission but also on the density of subscribers and distance between metropolitan regions. It is not practically possible to survey and analyze those differences for both business and residence services throughout the country. But the results of the interaction of the three large carriers with the regulatory process in California can serve as the first step in such a survey. The high density of traffic among that state's three large cities should have served as an incentive to increase share growth from reduced profit margins. And that state's public utility commission's required reductions in access charges should have provided the basis for price reductions that themselves could have led to increasing competitiveness in the 1990s.

Prices for representative long-distance calls from California have been estimated on the basis of appropriate adjustments in the assumptions as to calling patterns elsewhere in the country. Marginal costs have been estimated in the same way as for services in other markets, except for intrastate services dependent on within-California access charges, as shown in table 5–8. Thus marginal costs were at levels approximately half of those for interstate services throughout the 1984 to 1994 period.

TABLE 5–8
ESTIMATED MARGINAL COSTS OF A REPRESENTATIVE INTRASTATE LONG-DISTANCE MESSAGE

Date	Switched Service	Dedicated Service
	($ per message minute)	
01/01/84	0.212	0.117
07/16/85	0.181	0.102
01/15/86	0.183	0.103
03/15/86	0.179	0.101
03/19/86	0.162	0.092
01/01/87	0.156	0.089
05/01/87	0.134	0.078
06/01/87	0.151	0.087
11/05/87	0.115	0.069
01/01/88	0.127	0.074
06/10/88	0.127	0.075
09/06/88	0.124	0.073
10/01/88	0.124	0.073
01/01/89	0.099	0.060
05/01/89	0.108	0.063
09/01/89	0.110	0.065
01/01/90	0.090	0.055

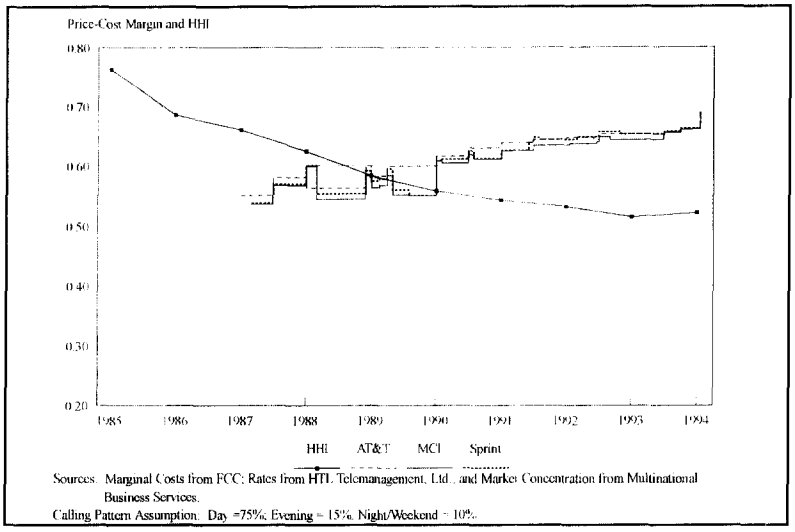
TABLE 5–8
ESTIMATED MARGINAL COSTS OF A REPRESENTATIVE INTRASTATE LONG-DISTANCE MESSAGE

Date	Switched Service	Dedicated Service
	($ per message minute)	
06/01/90	0.088	0.053
10/01/90	0.091	0.054
01/01/91	0.083	0.051
06/01/91	0.080	0.049
01/01/92	0.068	0.043
02/01/92	0.068	0.043
09/20/92	0.067	0.042
09/21/92	0.067	0.042
11/01/92	0.067	0.042
12/01/92	0.067	0.042
01/01/93	0.067	0.042
03/06/93	0.067	0.042
08/08/93	0.067	0.042
09/20/93	0.067	0.042
01/01/94	0.066	0.041

Source: As described in the text.

The resulting price-cost margins on MTS service offerings of AT&T, MCI, and Sprint in California on outbound calls to other states increased over time, as shown in figure 5-14. Initially, they increased and then decreased in a series of steps from 1987 to early 1990, but then increased systematically from mid-1990 to January 1994. The increase in margins in the 1990s was substantial, from five to ten percentage points, even though the HHI declined over that period. In addition, as figure 5-14 illustrates, a pattern evident in many long-distance service markets is repeated here. The individual carrier margins converged over time and by 1992, changes in margins took place at the same time and to the same percentage point.

FIGURE 5-14
INTERSTATE CALIFORNIA-BASED PRICE-COST MARGINS AND MARKET CONCENTRATION—MTS

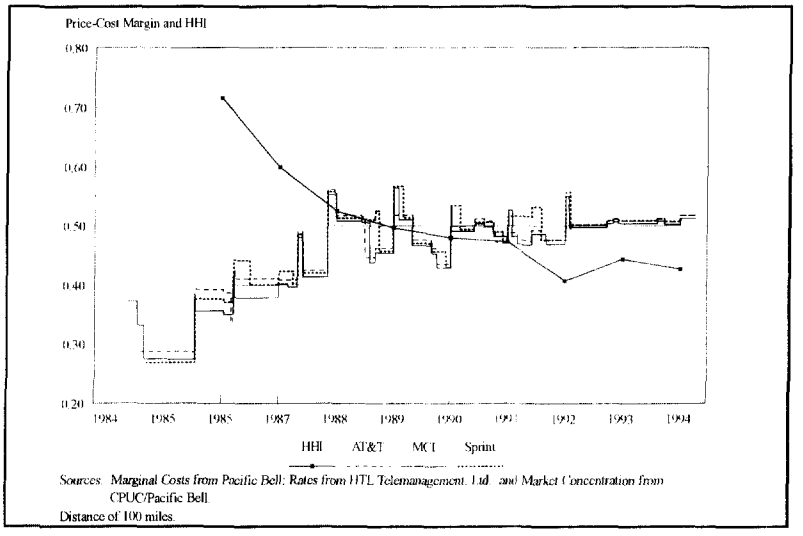


Sources: Marginal Costs from FCC; Rates from HTI, Telemanagement, Ltd., and Market Concentration from Multinational Business Services.
Calling Pattern Assumption: Day =75%, Evening = 15%, Night/Weekend = 10%.

The same three large carriers plus a fringe of smaller carriers and resellers provided interLATA long-distance services within the state. MTS price-cost margins increased despite the fact that the relevant HHI decreased over the entire post divestiture period (see figure 5–15). The primary difference between interstate and intrastate price-cost margins for MTS services was that interstate margins generally exceeded intrastate margins. That was most likely the result of two factors: (1) intrastate prices for 100-mile calls (the assumed distance) were substantially less than interstate prices for calls traveling between 926 and 3,000 miles (which account for 91 percent of calls in the assumed interstate calling pattern). Second, the marginal costs of those shorter intrastate calls were not substantially lower than the marginal costs of the longer distance interstate calls. Thus, higher interstate margins indicate that the carriers were able to discriminate against calls traveling long distances, as they did under rate regulation for decades before divestiture.[18] Such price discrimination on the part of interexchange carriers indicates not only that they exercised market power, but also that higher prices on longer-distance services carried forward the rate structure embedded in monopoly services prior to divestiture.

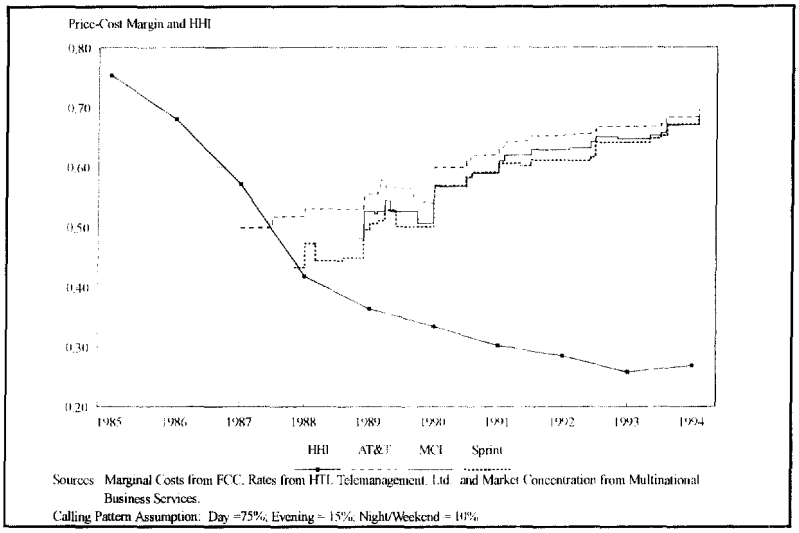
18. Given the calling pattern assumptions, AT&T's price for an interstate MTS call equals $0.2462 per minute (as of January 14, 1994), while the marginal cost of interstate switched service equals $0.0766 per minute. For an intrastate MTS call, AT&T's price equals $0.1364 per minute (as of January 1994), while the marginal cost of intrastate switched service equals $0.0658 per minute. Using the economic definition of price discrimination as differences in prices not accountable for by differences in costs, the observed prices and costs demonstrate that AT&T price discriminates against customers making interstate calls. That explains why the price-cost margin for interstate calls, which based on those prices and marginal costs equals 0.69, exceeds the price-cost margin for intrastate calls, which in that instance equals 0.52.

FIGURE 5–15
CALIFORNIA INTRASTATE PRICE-COST MARGINS
AND MARKET CONCENTRATION—MTS



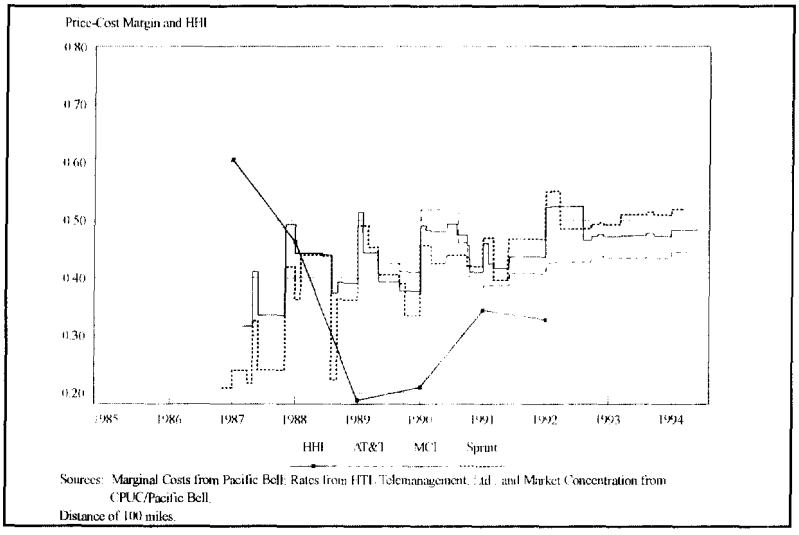
Price-cost margins for California interstate outbound WATS utilizing switched access increased from 1987 to 1993 by 5 percent per year even though the HHI decreased over the same period (as shown in figure 5–16). Margins rose from approximately 45 percent in 1987 to approximately 70 percent for each of the three carriers by 1994. The intrastate price-cost margins for those services followed a similar pattern, although the variation among the three carriers' margins was more substantial than in interstate service (see figure 5–17). Price-cost margins for MCI and Sprint increased from 25 percent in 1987 to 45 percent by 1994, while AT&T's margins fluctuated between 40 and 50 percent. Margins across the three firms changed by the same percentages in 1992, 1993 and 1994, so that margin differences among the firms were exactly maintained. At the same time, the HHI for intrastate service fell to a minimum in 1989 and then fluctuated over a narrow range.

FIGURE 5–16
INTERSTATE CALIFORNIA-BASED PRICE-COST MARGINS AND MARKET CONCENTRATION—WATS SWITCHED OUTBOUND (100 HOURS PER MONTH)



Sources: Marginal Costs from FCC. Rates from HTL Telemanagement, Ltd. and Market Concentration from Multinational Business Services.
Calling Pattern Assumption: Day =75%, Evening = 15%, Night/Weekend = 10%

FIGURE 5–17
CALIFORNIA INTRASTATE PRICE-COST MARGINS AND MARKET CONCENTRATION—WATS SWITCHED OUTBOUND (100 HOURS PER MONTH)



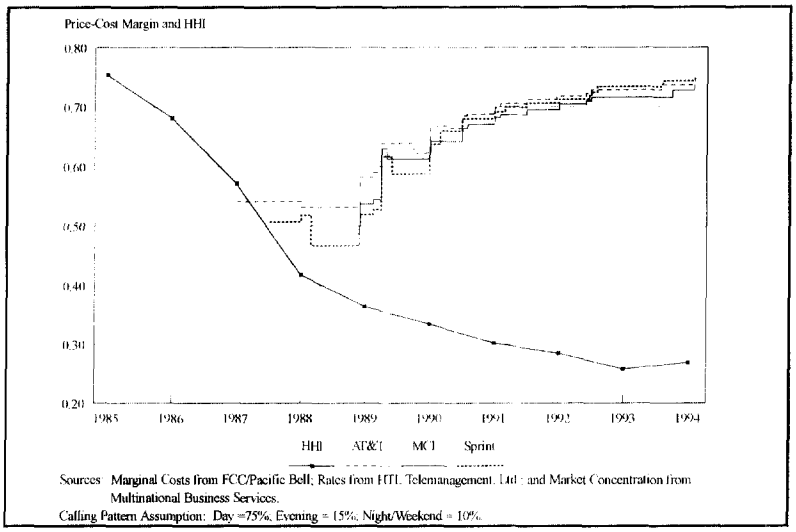
Sources: Marginal Costs from Pacific Bell; Rates from HTL Telemanagement, Ltd.; and Market Concentration from CPUC/Pacific Bell.
Distance of 100 miles.

By 1993, California interstate and intrastate outbound WATS price-cost margins were at the same level as counterpart interstate and intrastate MTS margin series. Since large WATS subscribers generally would be more price-sensitive, and would be able to press for margin reductions, that is somewhat surprising. It suggests that even large, sophisticated WATS buyers have been unable to obtain lower prices than those that residential customers pay net of the marginal costs of providing their services. The ability of the three large firms providing service in California to maintain coordinate pricing extends even to markets with large WATS buyers where the temptation would be greatest to engage in price cutting.

Margins for California interstate dedicated outbound WATS (1,000 hours per month) increased from approximately 50 percent in 1987 to 70 percent by 1994 (see figure 5–18). Even though carriers' access costs were less for dedicated outbound services, that did not result in commensurably lower prices.[19] For thirty-six-month as opposed to month-to-month contracts, margins were approximately 70 percent rather than 75 percent by 1994 (compare figure 5–19 with figure 5–16). In both markets, a 15-point spread in margins across the three largest service providers from 1987 to 1990 was replaced by essentially identical margins after 1990.

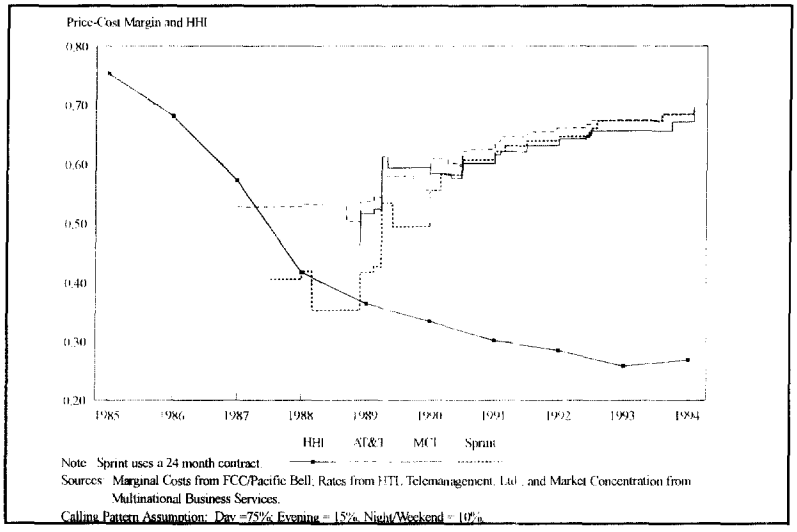
19. When making comparisons between price-cost margins for switched and dedicated services, it should be recalled that the usage levels differ, being lower for switched than for dedicated. Since the fixed costs of dedicated service are higher than the fixed costs of switched service, dedicated users must maintain a higher monthly usage level to make the dedicated service economic relative to switched.

FIGURE 5–18
INTERSTATE CALIFORNIA-BASED PRICE-COST MARGINS AND MARKET CONCENTRATION—WATS DEDICATED OUTBOUND (1,000 HOURS PER MONTH)



Sources: Marginal Costs from FCC/Pacific Bell; Rates from HTL Telemanagement, Ltd.; and Market Concentration from Multinational Business Services.
Calling Pattern Assumption: Day =75%, Evening = 15%, Night/Weekend = 10%.

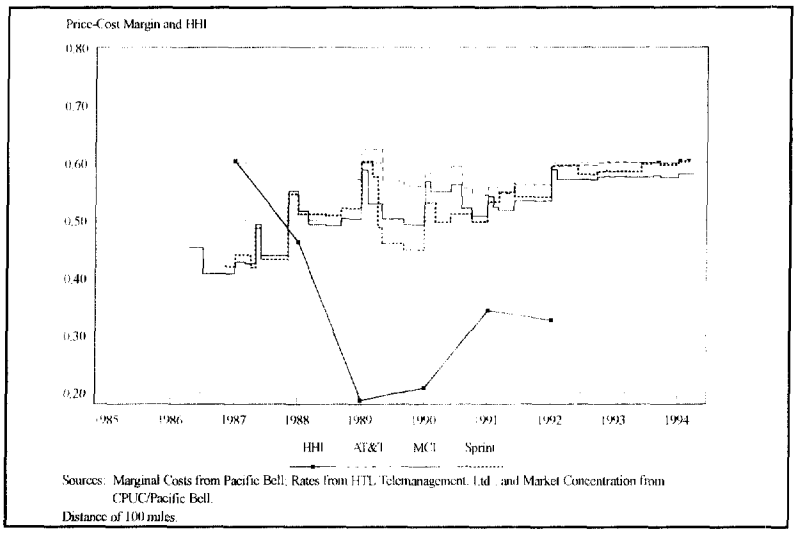
FIGURE 5–9
INTERSTATE CALIFORNIA-BASED PRICE-COST MARGINS AND MARKET CONCENTRATION—WATS DEDICATED OUTBOUND 36-MONTH CONTRACT (1,000 HOURS PER MONTH)



Note: Sprint uses a 24 month contract.
Sources: Marginal Costs from FCC/Pacific Bell; Rates from HTL Telemanagement, Ltd.; and Market Concentration from Multinational Business Services.
Calling Pattern Assumption: Day =75%, Evening = 15%, Night/Weekend = 10%.

Price-cost margins for California intrastate dedicated outbound WATS increased for MCI and Sprint from approximately 45 percent in 1989 to 60 percent in 1994 (see figure 5-20). That was the result of MCI and Sprint margins moving up to the AT&T margin level, which started in the 50-60 percent range. Such convergence reduced the dispersion in those margins substantially after 1989.

FIGURE 5-20
CALIFORNIA INTRASTATE PRICE-COST MARGINS AND MARKET CONCENTRATION—WATS DEDICATED OUTBOUND (1,000 HOURS PER MONTH)



Price-cost margins for interstate dedicated outbound WATS in monthly contracts actually exceeded margins in both interstate MTS and interstate outbound services without contract. That held for the respective intrastate services as well—customers entering into contracts for intrastate dedicated outbound WATS services paid higher prices, net of costs, than customers purchasing MTS or the (higher cost) switched outbound WATS services. Those customers demanding dedicated service have been larger volume users than those demanding switched service, and should have been able to extract lower prices, net of costs, from the major interexchange carriers by playing one source off against the other. But they did not. Coordination among service providers in setting these margins